

STATE OF SOUTH DAKOTA CLASS SPECIFICATION

Class Title: Communications Engineer

Class Code: 40816

Pay Grade: GJ

A. Purpose:

Supervises the technical operation, maintenance, and installation of broadcast and transmitter equipment, broadcast computer systems, and microwave equipment to ensure the network is in compliance with FAA and FCC rules and regulations and network standards are being met.

B. Distinguishing Feature:

The Communications Engineer is responsible for the engineering and repair of broadcasting systems and directs Communications Maintenance Technicians in the maintenance of broadcast transmission equipment statewide.

The Communications Engineering Supervisor directs the activities of the engineering staff responsible for the repair and maintenance of South Dakota Public Broadcasting's transmitter systems and has overall responsibility for all broadcasting design functions and all network television and radio transmitter and microwave sites in the state.

The Senior Communications Maintenance Technician performs unsupervised maintenance of electronic broadcast and microwave equipment and is identified by the FCC as the chief operator at a transmitter site.

C. Functions:

(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)

1. Supervises the installation, maintenance and operation of broadcasting and transmitter equipment and the maintenance of microwave equipment to ensure an optimum transmission signal is achieved and maintained.
 - a. Performs studies and makes decisions concerning equipment replacement needs for broadcast sites and studios.
 - b. Recommends equipment purchases and writes equipment specifications.
 - c. Decides which facilities receive new equipment and when the installation will be done.
2. Supervises the technical quality of remote broadcasts and determines need for power sources and special equipment needs to aid production staff in preparing for filming.
3. Diagnoses cause of broadcast equipment failures and makes necessary repairs or directs the accomplishment of repairs to ensure maximum on air capability.
 - a. Runs or directs the running of diagnostic tests and the visual inspection of equipment to evaluate failures.
 - b. Repairs, replaces, or directs the repair/replacement of defective components.
 - c. Prepares or directs the preparation of equipment for shipment to the manufacturer or maintenance depot for repairs.
4. Directs the installation and maintenance of microwave transmitting and receiving equipment to ensure continuity of the broadcast signal and efficient operation of equipment.
 - a. Writes contracts and monitors contractor performance in maintaining and repairing microwave towers and equipment.

- b. Ensures the repair of loose or broken hardware, replacement of lamps, and adjustment of dishes to optimize the broadcast signals.
 - c. Ensures preventive maintenance is performed by the reading of meters, checking of ground wires, and controlling of corrosion.
5. Installs, repairs and maintains the broadcast computer systems and computer controlled broadcast equipment to ensure proper television and radio production and broadcasting operations are achieved.
6. Adjusts and monitors broadcast signal levels to ensure compliance with FCC, FAA and network standards for legal operation.
 - a. Directs the routing of microwave signal to ensure the clearest signal is received.
 - b. Ensures signal strength and quality conform to FCC, FAA and network standards and requirements.
7. Completes transmitter, operation and maintenance logs to comply with FCC, FAA and network requirements and ensures completeness of logs completed by others.
8. Oversees that an adequate inventory of spare parts and supplies are maintained at sites to ensure repairs on transmitters and associated equipment can be completed as soon as possible.
9. Trains personnel in the proper procedures for repairing and maintaining broadcasting and studio equipment to ensure compliance with FCC, FAA and network standards and requirements.
 - a. Functions as lead worker and technical resource when traveling to network locations.
 - b. Carries the more expensive and complicated test equipment used in troubleshooting complex problems.
10. Performs other work as assigned.

D. Reporting Relationships:

Reports to the Director of Engineering and Technical Services. May supervise or act as lead worker over Communications Maintenance Technicians and Senior Communications Maintenance Technicians who maintain and repair the network broadcasting systems.

E. Challenges and Problems:

Challenged to stay abreast of increasingly complex electronic systems in the rapidly changing broadcast industry and learning to fully utilize the capabilities of each new piece of equipment; maintaining a fully operational broadcast system 24 hours a day with a network of aging transmitters; and diagnosing and directing repair actions of others at remote sites.

Problems include providing engineering support for productions both in studio and in remote locations; maintaining broadcast computer equipment that is essential to the many facets of network operations; traveling long distances in adverse weather in order to get a transmitter back on the air; and covering a large geographical area with a small staff.

F. Decision-making Authority:

Decisions include what equipment adjustments to make; determining if equipment is operating within tolerances; how to best install equipment in a facility; when equipment should be returned

to the manufacturer for repair; when new equipment is necessary; when to schedule preventive and routine maintenance; how to repair malfunctioning equipment; and how to interpret FCC and FAA rules and regulations.

Decisions referred include development of network policies; approval of major purchases; and approval of down time for major transmitter or studio repairs.

G. Contact with Others:

Weekly contact with private consultants, manufacturers, vendors, and other state agencies to discuss project requirements; and weekly contact with manufacturer's technical support staff for detailed technical assistance.

H. Working Conditions:

Work stations are spread across the state and must be accessed in all types of weather conditions. May be exposed to high voltage, adverse weather conditions, handling of hazardous chemicals, working alone, and lifting heavy equipment. May be required to work long hours in emergency situations.

I. Knowledge, Skills, and Abilities:

Knowledge of:

- the principles of engineering with electronic fundamentals;
- television and radio station technical operation and maintenance techniques;
- computer operational and technical skills; and
- FCC and FAA rules and regulations.

Ability to:

- direct the work of others; and
- communicate effectively.